CAA JOURNAL
U.S. DEPARTMENT OF COMMERCE
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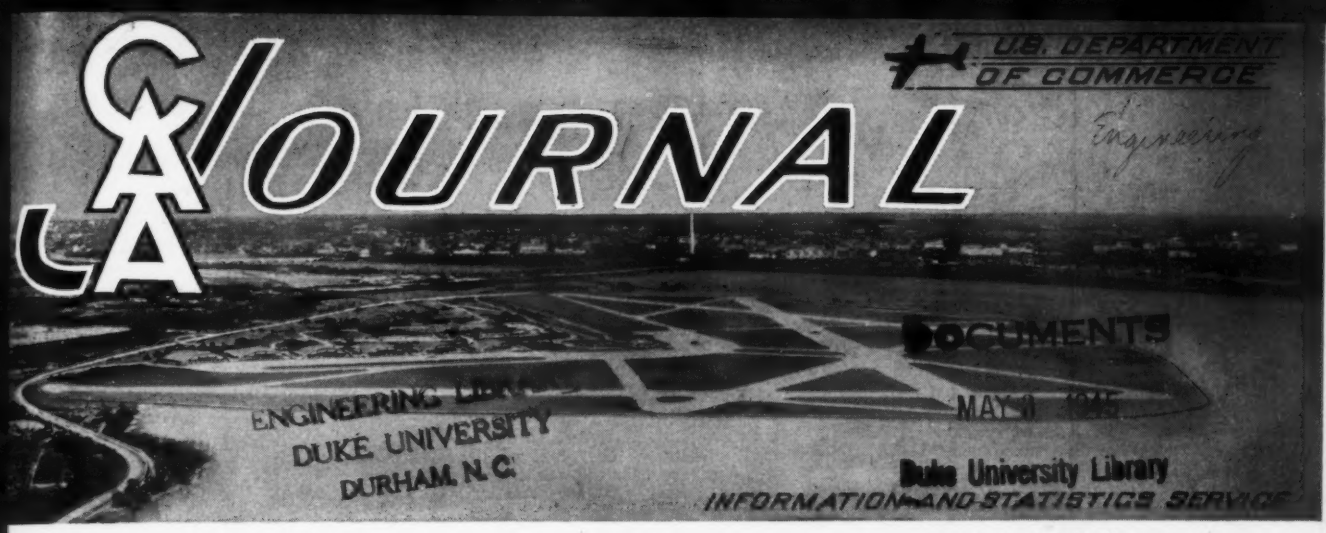

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AIRPORT BILLS ARE NOW BEFORE CONGRESS

Secretary Wallace Tells Senate Commerce Committee "Seed Money Will Make Job Crop"

The provision of "seed money," in the form of a Federal-aid airport program designed to produce a crop of jobs and new business is under consideration by the Senate Commerce Committee, which has been holding hearings on the Bailey Bill (S. 34) and the McCarran Bill (S. 2).

The Bailey Bill would authorize 80 million dollars a year for 10 years, and the McCarran Bill 100 million dollars a year for five years to carry out airport construction approved by the Civil Aeronautics Administration.

Making his first public appearance as Secretary of Commerce, Henry A. Wallace introduced the Department's presentation. He was followed by Assistant Secretary William A. M. Burden; T. P. Wright, Administrator of Civil Aeronautics; Charles B. Donaldson, Director of CAA Airport Service, and J. B. Bayard, Jr., Chief, CAA Airport Planning and Survey Division.

Wallace Urges Federal Aid.—"Civil aviation will be a most important factor in the postwar drive for economic expansion and full employment," Secretary Wallace said, "if the government lends a helping hand."

The airport construction program before the committee, Mr. Wallace continued, is "the most important single item in a well-balanced program for civil aviation development."

Citing experience with rivers and harbors, railroads, and highways, Assistant Secretary Burden asserted that "Federal expenditures to make better transportation available to our citizens have justified themselves not only in better communications and transportation but in the creation of important new industries."

Large airports, Mr. Burden pointed out, "are potential centers for the growth of substantial businesses, the small airports the equivalent of the village cross-roads general store, garage and filling station."

If the airport program is carried out, he predicted, "upwards of 100 million" will travel by airline "in another eight years, hundreds of thousands will travel by personal plane," and "other millions will visit airports."

Aviation's Future.—By reference to a series of charts, Administrator Wright illustrated his reasons for believing that with an adequate airport program the aircraft industry in this country would increase at the same rate as the automobile industry did in the 1900-10 decade. He forecast 425,000 civil aircraft 10 years after V-J Day if the CAA's four-point program is enacted. Headed by airport construction, Mr. Wright explained that this also calls for civilian pilot training, more useful personal planes, and simplified regulations.

After Director of Airports Donaldson described the five classes of airports into which present and proposed fields are divided, Mr. Bayard, his Chief of Planning, showed how the nation was deficient particularly in the two smaller classes, as a result of emphasis in the public works and defense programs on large airports. He brought out, however, that even at presently certificated airline stops, 64 per cent of the airports require improvement or new construction. In addition, Mr. Bayard reported 86 per cent of the locations to which airlines want to extend service lack suitable airports.

Wallace Outlines Views.—Mr. Wallace, who informed the Senators parenthetically that he intended learning to fly in order to understand better the problems of this important industry, outlined his views on airports in part as follows:

"If we develop a sound program for civil aviation development, we can achieve in the first postwar decade a healthy aircraft industry several times its pre-war size—large enough in fact to make a real contribution to our national economy.

"Forecasts are not mathematical certainties, but there is good evidence for believing that by two years after the defeat of Japan civil aviation can furnish employment to 150,000 persons. Eight to ten years after V-J Day it is quite possible that 400,000

(*See Wallace, page* 47)

CAA Applies Radar To Civilian Aviation

First steps in applying the technological possibilities of radar to civilian aviation have been taken by the Civil Aeronautics Administration, using 10 carloads of radar appliances lent by the Army and Navy.

The CAA Experimental Station at Indianapolis has a series of experiments underway which are expected to increase the safety factors of flying in instrument weather, especially in zones of traffic saturation.

Two main objectives of the research are a perfection of a screening device which will permit the tower controller to visualize the actual positions of all aircraft within a radius of approximately 25 miles, and a collision warning device, to be installed on the instrument panel of the plane, which would give constant visual indication of the relative position of hazards whether stationary or in motion.

A traffic control tower equipped with a radar type of screen, such as the CAA is planning to adapt, could monitor the movement of all planes on instrument approach. This would detect immediately any menacing condition that might occur because of pilot's error, or some mechanical failure in the radio landing system. Other methods of landing "blind" through use of radar are being studied.

With radar, the tower controller could adjust the flow of outbound traffic with complete confidence as to the exact whereabouts of inbound traffic, over traffic, and other departing planes. At present, this can be determined only through pilots' position reports which are not always accurate, and are time-wasting, as only one can be heeded at a time.

Basic function of a collision warning device is to advise the pilot of the relative separation of his aircraft from other aircraft and obstacles in his path. Preferably the indication would show the separation laterally, vertically, and from all directions. Such a device was developed several years ago by

(*See Radar, page* 44)

Non-Scheduled Flying Group Makes Important Suggestions

After announcing meetings for a two-day period, the Non-Scheduled Flying Advisory Committee for the Civil Aeronautics Administration stayed in Washington four days, and then handed to Administrator T. P. Wright a list of far-reaching and comprehensive recommendations.

The twelve-man committee, coming from all parts of the country, with heavy representation of the private flier, as well as five major sections of the aviation industry, dealt with all subjects listed in the preliminary, tentative agenda, and then inserted subjects of its own for further discussion.

Prior to its next regular meeting, sometime within the next three months, a special sub-committee of 10 members meet in Des Moines, Ia., April 14 and 15 to discuss airports.

Administrator Acts.—Before the committee had concluded its meetings, the Administrator had acted on one of its recommendations. He issued an order providing that physical examinations for private pilots may be given by any registered physician, beginning June 1.

With Arthur I. Boreman, publisher of the Dry Goods Journal of Des Moines, as chairman, the committee began its sessions March 22, ending its meetings March 26. Those attending and the fields they represent, were Joseph Bergin, state aviation organizations; John Groves, airlines; Beverly Howard, airport service operators; W. T. Piper, manufacturers; and Arthur I. Boreman, aviation consumers. In addition, there was one representative of the private fliers in each of the CAA's seven regions: Fred Weich, region 1; Harry Playford, region 2; William A. Mara, region 3; Edward Garbacz, region 4; James C. Johnson, region 5; Douglas Robinson, region 6; and Ed Williamson, region 7.

Following are the recommendations presented to the Administrator by the committee:

Medical Examination.—Medical examination of applicants for private pilots' licenses may be given by any registered physician, who will be guided by a simplified form provided by the Civil Aeronautics Administration.

Non-Scheduled Flying.—The committee recommended that the order exempting commercial non-scheduled operators from provisions of the CAB requiring them to obtain certificates of public convenience and necessity, be continued until at least two years after the war, to permit gathering of more experience, entrance of returning veterans into this business and to take advantage of new types of planes.

Air Marking.—The CAA's grid system of air marking should be adopted, and the Administrator should seek funds to extend it as rapidly and widely as possible over the whole country. The committee also commended the Cessna Aircraft Corporation for its initiative and energy in promoting air marking.

Radio in Private Aircraft.—The committee petitions the Federal Communications Commission, through the CAA, to simplify radio licensing requirements so that anyone can easily obtain a license for an aircraft radio transmitter and for a license to operate it.

Flight Instruction.—The Administrator is asked to prepare a simple, practical plan by which private pilots with safe operating records may give flight instruction, culminating in a private license, provided no fees are charged.

Training and Rule Books.—The committee recommended that Civil Air Regulations and training manuals, which it described as dull and uninteresting, be made more interesting to the public through the use of modern advertising technique.

Weather Minimums.—The committee recommended that further intensive study regarding approach channels to airports be made to take advantage of new devices and methods.

Statistical Information.—The committee asked the CAA to make available lists of pilots, aircraft owners and aircraft, if necessary through an independent agency.

Regional Meetings.—The committee agreed that its regional members will confer with Regional Administrators of the CAA to arrange group meetings.

Civil Air Regulations.—Proposed revisions of the CAR's now before the Civil Aeronautics Board, were discussed in detail, and all were approved with the following exceptions:

Aeronautical Knowledge.—Written examinations for private pilots' licenses should be limited to contact flight rules, and air traffic and pilot rules as included in Parts 43 and 60 of the CARs.

Aeronautical Experience.—The committee recommended that the applicant for private pilot's license have at least 8 hours of dual instruction before solo; a minimum of four hours of dual check time after solo, and 28 hours of solo flight time. In non-spinnable aircraft, 5 hours of dual before solo, three hours of dual check time after solo, and 19 hours solo flight time.

Aerobatic Flight.—No pilot shall fly aerobatics unless all occupants of the plane wear parachutes and give their consent.

Instrument Flight.—Required instrument experience shall be on the basis of at least one hour during the preceding 30-day period and six hours during each half-calendar year.

Definitions.—The committee recommended that the proposed five-mile radius of Airport Traffic Control Zone be reduced to three miles.

Horsepower Rating.—The committee recommended that the 0 to 100 horsepower rating be eliminated, and that all horsepower range be listed in the 50 percent above and below manner.

Subcommittees for continued study were appointed at the meeting to discuss gliding and soaring, in addition to airports. About airports, it said, "The creation of an adequate airport and airpark system is fundamental to the proper growth and general acceptance of aviation. We therefore commend the efforts of the CAA to develop a sound airport program and urge the Administrator to endeavor to obtain necessary funds to continue CAA's surveys and program."

Control Tower Men 'Talk' Lost Lieutenant In B-29 To Safe Port

Lost in the smothering blackness of a snow storm, a mile above the earth, a young Army lieutenant (not named in report) piloting a crippled B-29 called for help. CAA traffic control men heard him and literally "talked" him to a safe landing at the Fairfax, Missouri Airport, in a little less than an hour.

First to hear the lieutenant's call for help were Chief Air Traffic Controller Franklin R. Hardesy and Controller Harold W. White at the Fairfax Airport. At that time the distressed craft was 80 miles northwest of the Kansas City port and 6000 feet up. He was lost and ready to "try anything."

Fairfax turned him over to Controllers William H. Woolf and Wilma J. Bair at the Kansas City landing field, and between the two control centers he was led down out of the darkness and storm to safety at the Fairfax port.

As the lieutenant climbed out of his plane he reported that besides being lost his craft had iced badly; caught fire—extinguished before landing; his "props had gone wild," and his radio equipment, except the very high frequency transmitter and receiver was cut out of commission. But he was down, hale and sound and the $600,000 Army plane had suffered no damage other than that reported.

New Props Certificated

Two new types of propellers were approved by the CAA recently. In addition, new models were added to engines, propellers and appliances previously type certificated. The approval numbers and dates of approvals appear in parentheses.

New Types

Propellers—

Sensenich, model 90JA; wood; 90 in. diameter; 89 in. to 79 in. pitch; 225 hp, 2000 rpm. (Type Certificate No. 811, 2-12-45)

Sensenich, model 44K24605; wood; 90 in. diameter; 81 in. pitch; 225 hp, 2000 rpm. (Type Certificate No. 811, 2-12-45)

New Models

Engines—

Pratt & Whitney, model Wasp Jr. SB-4; 9 cyl. radial air cooled-direct drive; rating: 450 hp at 2300 rpm from sea level to 3500 ft. altitude for all operations. Weight 684 lbs. Uses 87 octane fuel and is designed for mounting with the crankshaft pointing upward vertically. (Type Certificate No. 123, 2-13-45)

Propellers—

Flottorp, model 76F1; wood; 76 in. diameter; 62 in. to 54 in. pitch; 113 hp, 2200 rpm. (Type Certificate No. 754, 2-7-45)

Sensenich, model 100CC; wood; 100 in. diameter; 67 in. to 58 in. pitch; 225 hp. 2100 rpm. (Type Certificate No. 546, 2-15-45)

Sensenich, model 100CD; wood; 100 in. diameter; 67 in. to 58 in. pitch; 225 hp, 2000 rpm. (Type Certificate No. 546, 2-15-45)

Sensenich, model 98AA; wood; 98 in. diameter, 66 in. to 62 in. pitch; 225 hp, 2100 rpm. (Type Certificate No. 546, 2-27-45)

Sensenich, model 43K13605; wood; 90 in. diameter; 79 in. pitch; 225 hp, 2000 rpm. (Type Certificate No. 811, 2-27-45)

Flottorp, model 75C; wood; 75¼ in. diameter; 48 in. to 42 in. pitch; 63 hp, 2300 rpm. (Type Certificate No. 408, 2-28-45)

Appliances—

Pan American Airways, safety belt models 19.010.037D-21, -22, -23 and -24. Approved for one person. (Type Certificate No. 104, 2-10-45)

Helicopters Latest Addition To CAA's Aviation Activities

Helicopters have been added to Civil Aeronautics Administration activities in a very definite way.

At the Washington National Airport students are being trained to operate the rotor-wings, and the problems they will bring to airways and airports are getting a first-hand inspection.

Lynn Probst, teacher of the CAA's new helicopter school, and Paul E. Young, Assistant Chief General Inspection Division, are shown on the "bridge" of the training helicopter.

Meanwhile the Engineering Division is studying requirements for helicopters, and Charles I. Stanton, Deputy Administrator of Civil Aeronautics, told a meeting of the American Helicopter Society at Bridgeport, Conn., that preparations were being made to welcome them to the nation's airways.

Requirements for certificating helicopters and their pilots, and helicopter design problems are being studied by the Civil Aeronautics Administration, using a craft lent the Administration by the Army.

Two principal purposes will be accomplished. CAA personnel will be familiarized with helicopters, and a number of them will be trained as rotor-wing pilots.

One of the primary research projects is the study by the Flight and Aircraft Engineering Divisions of vibration problems in the helicopter through use of the CAA's specially-developed electronic vibration measuring equipment, and blade motion study through use of its ultra-high speed motion picture cameras. All these studies will be carried on in collaboration with the Air Technical Service Command.

There are now three CAA helicopter pilots, all of whom were trained by the Coast Guard at its school at Floyd Bennett Field, New York. Lynn Probst, Chief of the Flight Instruction Unit, is now pilot of the borrowed craft and Herbert Toomey, Chief of the Flight Engineering Branch of the CAA's Sixth Region, and Donald R. Beardslee, Flight Engineering Inspector of the First Region, are the other instructors.

At Washington, Probst has started teaching four others: Paul E. Young, Assistant Chief, General Inspection Division; Roy Caldwell, Flight Engineering Inspector, Sixth Region; R. B. Maloy, Technical Assistant to the Director of Safety Regulations; and Burdell Springer of the Aircraft Engineering Division, a CAA specialist on rotorwing plane design. All are certificated pilots but Springer, and his instruction will be in the nature of a study of the ease or difficulty of teaching novices how to pilot helicopters. Chief mechanic on the helicopter is Pauly R. Steinman.

To date, the CAA has given approximately 20 helicopter pilot ratings, and applications are being received continually.

The craft lent the CAA is an early model, containing parts of Number 1 and Number 3. It is the standard Sikorsky type, YR-4B,

(*See Helicopters, page* 41)

Boston Typifies Need Of Many City Areas For Small Airports—Burden

The need for small airports in metropolitan areas is typified by the case of Boston, Assistant Secretary of Commerce William A. M. Burden told the Aeronautical Association of that city in a recent address.

Pointing out that there is not one small private flying field within a reasonable distance of Boston, Mr. Burden said that except for defense zone restrictions, four such fields would be justified even now, and "conceivably you could use up to 60 landing areas in this vicinity ten years after the war."

CAA as Advisor.—However, Mr. Burden declared, "sound planning of airports for a metropolitan district is a complicated matter, often involving several political units," and the CAA cannot dictate programs for such areas. It will offer its advisory services where the local officials concerned get together and request them, he added, citing Philadelphia and its surrounding counties as a successful example of such procedure.

Answering the question, "How can this country support 40,000 airplanes?" Mr. Burden referred to Treasury Department reports that more than 900,000 persons had incomes of more than $5,000 a year in 1941. In addition, he said, "there are many others of lesser income who will avail themselves of airplane rental services or flying clubs, which spread the fixed costs of ownership. such as hangar rental, insurance and depreciation."

Government Aid Needed.—Mr. Burden attached to his estimates of postwar aviation growth the proviso that they would not be realized without government assistance. He expressed the belief that there would be a tapering off "to little more than a replacement market" unless the government "provides enough airports in the right places; sponsors basic research that will contribute to the development of more useful and thereby more popular planes; conducts a program of limited financial aid to civil flight training and continues to encourage the introduction of aviation education into the schools."

Operating Revenues Up Almost 7 Millions in 1944

Operating revenues for domestic airlines including All American and Hawaiian lines for the year ending Nov. 30, 1944, are reported as $34,378,337 against $27,547,455 for the 12-month period.

Express and freight revenues fell off, according to the CAB report. In 1944 they decreased from $8,457,929, the 1943 figure, to $8,003,798.

Statistics covering the operating expenses for the year ending Nov. 30, 1944, follows:

	1944	1943
Revenue miles flown....	139,031,110	103,316,249
Operating revenue:		
Passenger	$113,037,592	$85,586,144
Mail	32,405,766	23,832,100
Express and freight.	8,003,798	8,457,929
All other	2,788,577	3,069,267
Total	156,235,733	120,945,440
Operating expenses.....	121,857,396	93,397,985
Net operating revenue..	34,378,337	27,547,455

Air Carrier Revenues For Jan. 1945 Increase By Half, CAB Reports

Revenue-miles of 18 domestic airlines increased more than 50 percent in January of this year as compared with the same month last year, according to a statement by the Civil Aeronautics Board.

The CAB announcement showed the revenue increase to be 50.57 percent; mail pound miles, 42.36; express pound-miles, 33.29 and the number of revenue passenger-miles 45.70 in comparison with January 1944.

Operations for January.— The airlines flew 86.91 percent of their scheduled mileage in January. Of the 18.62 average available seats per mile, about 83.34 percent were occupied by revenue passengers, as compared with 18.35 average available seats of which 88.06 percent were occupied by revenue passengers for the same month last year.

The average airplane load on the commercial airlines during January was 15.52 passengers, 705.1 pounds of mail, and 244.9 pounds of express, as compared with 16.16 passengers, 746.8 pounds of mail, and 277.0 pounds of express a year ago.

Private Firms Permitted To Retread Carrier Tires

The Air Carrier and Aircraft Engineering Divisions of the CAA announce a modification of policy regarding the treading of tires for air carrier use.

Local, privately-owned treading agencies will be permitted to do the work provided an inspection is first made by a representative of the Administration to make sure the agency has adequate equipment; that the workmanship is satisfactory; and that sufficient trained personnel is employed.

Once this inspection is made, establishing that the agency is qualified, no other inspection is necessary although an inspector may occasionally call on the agency.

The name of the tire manufacturer is buffed off the sidewall of the treaded tire since the original manufacturer will no longer be responsible for the tire.

A statement is submitted in duplicate through the inspector to the Aircraft Engineering Branch describing the treading process employed, the grade of materials used, and to what extent the old rubber is removed from the tread and whether new rubber is put on the sidewalls down to the bead. This statement need be submitted only once, either at the time of the initial inspection of the agency's facilities or as soon thereafter as possible.

Attend London Meeting

Charles F. Dycer, Chief, CAA Flight Engineering and Factory Inspection Division, and Paul Spiess of the CAA Aircraft Engineering Division, are in London to confer with British technicians on airworthiness requirements of aircraft used in international civil operations.

Air Service Approved For Southern Points By Examiners of CAB

Establishment of air service between points in the United States and places in Mexico, Central America, South America and the Caribbean area is recommended in a report of Francis W. Brown, chief examiner of the Civil Aeronautics Board, who, with Examiner H. Heinrich Spang, studied the applications for charters filed by the firms involved.

The examiners recommended:

That Panagra's certificate be amended to provide for service between Balboa and Buenos Aires via Guayaquil, Lima, and Antofagasta.

That Pan American's certificate be amended to provide for service between Port of Spain and Buenos Aires via Manaos and Asuncion.

That Pan American's certificate be amended to include Sao Paulo as an intermediate point between Rio de Janeiro and Porto Alegre.

That Eastern's certificate for route No. 6 be amended to provide for service between Miami and Balboa via Havana and Kingston.

That Pan American's temporary certificate for a route between New Orleans and Guatemala City via Merida be made permanent.

That a certificate be issued to Braniff authorizing service between Houston and Balboa via Merida.

That a certificate be issued to Pan American authorizing service between New York and San Juan.

That a certificate be issued to Pan American authorizing service between New Orleans and Havana.

That Pan American's certificate be amended to include Curacao as an intermediate point, to include Santiago as an intermediate point between Port-au-Prince and Kingston, to permit service between Havana and Kingston and between Havana and Santiago, to permit carriage of mail between Port-au-Prince and Kingston, and to authorize service to Caracas in lieu of La Guaira, and Balboa in lieu of Cristobal.

That American's temporary authorization to operate between Fort Worth-Dallas and Mexico City via San Antonio and Monterrey be made permanent subject to the restriction that service to San Antonio be limited to flights originating or terminating in Mexico City.

That Western be granted a certificate authorizing service between Los Angeles and Mexico City.

Causes of Plane Accidents

Air carrier accidents over a period of five years, as reported by the National Safety Council, show 40 percent attributable to personnel; 27 to engine or structural failure; weather, 13, and 20 to other causes. In private flying human error was held responsible for 59 percent; failure of engine or plane, 23; weather, 6, and other causes, 12 percent.

Vol. 6 April 15, 1945 No. 4

CAA JOURNAL

Henry A. Wallace
Secretary of Commerce
Civil Aeronautics Administration
T. P. Wright, Administrator

Issued on the 15th of each month. Subscription $0.50 a year. Sold by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Approved by the Bureau of the Budget.

INFORMATION AND STATISTICS

Q—How may I obtain training as an Army helicopter pilot? —M. W.

A—Candidates for this instruction who are in the Military Service must be in the Army Air Forces and his selection for the training depends upon his qualifications and the need for helicopter pilots.

Q—If two airplanes having exactly the same flying characteristics (same air area) were flying side by side (and) one plane were loaded and the other empty and both engines gave out altogether (simultaneously) and both planes went into a glide from the same starting point would they land in the same distance, the loaded one reaching the ground first or would the light plane glide farther than the loaded?—R. F. LaF.

A—Provided it is the purpose of the pilots to stretch the glide as far as possible it would involve the flying of both planes at the angle of attack for which the ratio of lift to drag is a maximum. Under these circumstances each plane would follow the same flight path and would, therefore, reach the ground at the same point. The speed of the loaded plane would, however, exceed that of the light one and the one bearing the load would reach the ground first.

Q—I hold the rating of Technical Sergeant, instrument specialist, and my primary function is instrument trouble shooting on the flying line. What fields are open to a discharged soldier with my training and experience?—T-S J. G.

A—The Civil Aeronautics Board has under consideration a specialist rating which probably will interest you. The examination for this rating will cover the ground which your military duties have made familiar. In addition the Veterans' Bureau has established schools for returning soldiers who wish to prepare to take the examinations for mechanic's rating.

Sets National Airlines Hearing

Hearing on the application of National Airlines to include New Bern, N. C., as an intermediate point on Route 31 has been set for March 24 by the Civil Aeronautics Board.

Administrator Wright Sees Private Plane Mainstay of Postwar Aviation Industry

$2,500 Craft Will Have Speed of 150 M.P.H. with Room for Whole Family

Private airplanes costing no more than $2,500, probably less, with a cruising speed of 150 miles an hour, will constitute the backbone of the peacetime aviation industry. Plans for these planes must be ready, not after peace comes, but now.

Administrator Wright of Civil Aeronautics sees the problem he outlines as one of present urgency which must be shared between industry and the CAA, each within the field of its legitimate activities and both acting vigorously.

Approve CAA Plan.—Leaders of the industry have subscribed without reservation to the CAA proposal which sets up this six-point program:

More acceptable planes
More airports
Simpler regulations
A public training program
Consumer sales program
Better, cheaper planes

Three of these—more airports, simpler regulations and public training all come within the purview of the CAA. The others are on the shoulders of the industry as matters of successful business routine.

Mr. Wright pointed out today's planes are too expensive and lack safety and utility features which must be developed if the public is to accept widely tomorrow's plane as a family vehicle. The most popular type, he believes, will be capable of seating four persons.

Dovetailing into the CAA's National Airport Plan is the necessity for the development of crosswind landing gear to make possible the construction of an adequate number of one-runway landing fields at a reasonable public cost. If industry does not take the initiative in this, the CAA will sponsor the development of an undercarriage which will permit crosswind landings. A saving of 50 percent can be effected by making one-runway fields feasible.

Private Flying in 1956.—With the possibility of some 400,000 private planes in operation in 1956, Mr. Wright said in reference to the type of craft: "I do not intend to imply only four-place planes should be sold in quantity. Single and double-place planes will undoubtedly be popular. But 400,000 is a great many and the comparison between the smaller planes and the family model will be something like the ration between motorcycles, coupes and sedans.

"Private flying is emphasized because we look upon it as the brightest hope for a mass market which will sustain even a fraction of our present $20,000,000,000-a-year aircraft manufacturing industry.

"That is why we call for (in the National Airport Plan) an increase in the number of Class 1 and 2 airports from 1,791 to 4,795, while Class 3 or larger fields would go only from 1,151 to 1,510."

Posey Goes to Costa Rica

Carl Posey, Civil Aeronautics Administration district airport engineer at St. Paul, is en route to Costa Rica, to advise the government of that country on improving the airport at San Jose. His mission is expected to take about two months.

Helicopters

(*Continued from page* 39)

and is powered with a 185-hp Warner engine.

Mr. Stanton said:

"Specific requirements for helicopters have been discussed at meetings of our Aircraft Engineering Division and representatives of the helicopter manufacturers. A final draft of the CAA's recommendations for these requirements is now being drawn up and will soon be submitted to the CAB for final approval. This is the standard procedure for handling new parts and changes of the Civil Air Regulations. We hope you will contribute your thoughts when you examine the draft."

Gives CAA New Problem.—Mr. Stanton laid emphasis on the necessity for a study of the problems the comparatively new aircraft will bring within the purview of the CAA when he commented: "A healthy economy in our country will need the highest possible employment in every possible branch of our living, and I look for the helicopter in industry to play a part in that economy which might surprise many people. I would not attempt to visualize the type of aircraft which will swarm in our skies some years from now when the practicability of owning sky transportation takes the majority of our families into the air, but I do sincerely feel that it will be some form of craft which employs the vertical or near vertical flight abilities of the helicopter.

A Lusty Infant.—"The helicopter, in its infancy, is spurting close to the airplane as the answer to the private pilot's desires. It does not tax my imagination to picture a sky plentifully sprinkled with whirling rotors, within a very short time. America is waiting, hopefully; the rest is up to the men at the drawing boards."

Briefly summarizing the duties of the CAA the speaker said: "And we now welcome and absorb an entirely new instrument of flight. It is our duty and pleasure to help promote the helicopter to the full extent of its capabilities.

New Rules Necessary.—"This means not only must we pass upon each new model as airworthy, but we must certificate each pilot, and help work out, and then enforce, an entirely new group of air traffic rules and regulations to apply to helicopters. Undoubtedly, the qualifying requirements for all types of certificates will be different. It has already been suggested to us that two extra hands and one extra foot per pilot would be extremely desirable, but we hope you will be able to take care of that by development—of its machine, not the human make-up."

As a possible competitor of fixed-wing planes Mr. Stanton referred to the many industrial jobs, tentatively assigned to the airplane, which may go to the helicopter. He said: "It is not difficult to imagine the helicopter performing many of the industrial jobs already planned for fixed-wing air-

(*See Helicopters, page* 48)

Honored by the Army

Administrator T. P. Wright of Civil Aeronautics receives the Army "Commendation for Exceptional Civilian Service," the highest honor the military can confer on a civilian. The decoration is in recognition of Mr. Wright's services to the aviation industry while he was connected with the War Production Board.

CAA Advises Municipalities To Buy Airport Land Now

"Get your airport acreage now, before the rush starts."

This is the advice being given to American cities by the Airports Service of the Civil Aeronautics Administration, pointing out that postwar demand for vacant land in the suburbs of cities and towns will be intensified by the requirements for housing.

"The function of the CAA is to advise on the location, design and construction of airports," Charles B. Donaldson, Director of the Airport Service, CAA, said recently. "It is also our duty to see that federal money is wisely spent, and there were instances in our recent program of building war airports, where the site selected by the city was inexpensive to buy, but very costly to prepare. In that program, only federal money was used to prepare the landing facilities with the local sponsor providing only the land. If Congress authorizes our proposed program, however, the whole cost probably will be shared 50-50 by the local sponsor and the federal government. Thus, site selection becomes more important financially to both parties.

"We recognize there will be a sharp demand for acreage close to cities after the war when the nation begins to catch up on home building which the war has interrupted. Competition of would-be buyers of land will therefore be heightened, and if the cities can get possession of potential airport sites now, they will be in better position after the war. Location and design of these airports is a matter in which the CAA can help, and we are eager to do it. Once such land is built up, it is lost for airport purposes forever.

"The same condition prevails in the matter of downtown airports on the site of slums that have been cleared away. Any such sites that are suitable for airports should be considered now."

Domestic Air Carrier Statistics

Operations for February 1944

Prepared from official reports, submitted by the air carriers listed, to the Civil Aeronautics Administration and the Civil Aeronautics Board

Operator and routes	Revenue miles flown	Revenue passengers carried[1]	Revenue passenger miles flown	Express carried (pounds)	Express pound-miles flown	Passenger seat-miles flown	Revenue passenger load factor (percent)
All American Aviation Inc. Pittsburgh-Huntington, Jamestown, Williamsport, Harrisburg, Washington—**Total**	**89,409**	**0**	**0**	**8,959**	**1,536,822**	**0**	.....
American Airlines Inc.—**Total**	**2,987,356**	**72,863**	**45,549,560**	**2,357,204**	**1,102,168,650**	**53,419,667**	**85.27**
Dallas-Los Angeles	1,035,552	19,517	17,356,685	283,464	259,488,607	19,512,438	88.95
New York-Chicago[2]	487,710	17,595	6,466,353	943,507	402,084,033	7,615,384	84.91
Boston-New York	139,162	13,006	2,235,109	335,897	50,027,182	2,800,593	79.81
Cleveland-Nashville	74,615	4,800	1,178,802	118,400	30,683,591	1,487,906	79.23
New York-Fort Worth	775,166	21,969	11,122,372	393,897	212,864,304	13,427,087	82.84
Washington-Chicago	125,111	4,368	1,730,971	105,884	41,029,384	2,111,547	81.98
Chicago-Fort Worth	177,826	6,367	2,730,414	119,063	59,481,621	3,340,535	81.74
Buffalo-Toronto	2,964	510	38,760	1,744	158,232	59,052	65.64
El Paso or Fort Worth-Mexico City	169,250	3,009	2,690,094	55,348	46,351,696	3,065,125	87.76
Braniff Airways Inc.—**Total**	**470,213**	**18,214**	**7,698,883**	**160,317**	**77,294,225**	**9,211,082**	**83.58**
Chicago-Dallas	256,461	8,388	4,243,060	108,317	63,202,712	4,903,255	86.54
Denver-Brownsville	186,304	8,268	3,053,103	42,456	12,475,064	3,751,040	81.39
Houston-Nuevo Laredo	27,448	3,044	402,720	9,544	1,616,449	556,787	73.59
Chicago & Southern Air Lines Inc.—**Total**	**299,058**	**9,245**	**4,138,025**	**133,758**	**55,508,861**	**6,135,254**	**67.45**
Chicago-New Orleans	251,710	8,314	3,422,152	118,656	50,815,061	5,150,380	66.44
Memphis-Houston	47,348	2,029	715,873	15,102	4,693,800	984,874	72.69
Continental Air Lines Inc.—**Total**	**224,577**	**5,743**	**2,349,388**	**38,537**	**18,698,471**	**3,285,029**	**71.52**
Denver-El Paso-San Antonio	142,929	3,909	1,431,943	12,865	5,783,949	1,822,045	78.59
Denver-Tulsa	28,452	1,155	294,757	4,096	1,029,550	473,382	62.27
Denver-Kansas City	53,196	1,189	622,688	21,576	11,884,972	989,602	62.92
Delta Air Corporation—**Total**	**370,646**	**15,853**	**6,150,480**	**98,364**	**38,538,280**	**7,537,182**	**81.60**
Charleston or Savannah-Fort Worth	312,736	12,804	5,116,923	57,145	25,054,672	6,342,517	80.68
Atlanta-Cincinnati	57,910	3,182	1,033,557	41,219	13,483,608	1,194,665	86.51
Eastern Air Lines Inc.—**Total**	**1,722,339**	**51,171**	**28,192,715**	**641,774**	**370,185,673**	**32,647,052**	**86.36**
New York-San Antonio or Brownsville	522,105	15,639	8,202,501	181,103	115,905,134	10,277,292	79.81
New York-Miami	716,990	21,837	11,613,499	239,574	160,327,415	12,856,409	90.33
Chicago-Jacksonville	275,579	10,834	4,859,083	151,330	58,193,188	5,425,940	89.55
Atlanta-Miami	136,033	5,873	2,488,942	25,799	12,697,369	2,677,058	92.97
Washington-St. Louis	71,632	2,747	1,028,690	43,962	23,062,567	1,410,353	72.94
Inland Air Lines Inc.—**Total**	**120,056**	**3,936**	**1,282,759**	**5,948**	**1,550,851**	**2,095,356**	**61.22**
Denver-Great Falls	89,630	4,352	1,135,347	5,818	1,510,567	1,844,478	61.55
Cheyenne-Huron	30,426	645	147,412	130	40,284	250,878	58.76
Mid-Continent Airlines Inc.—**Total**	**193,125**	**7,058**	**1,833,928**	**32,503**	**9,577,117**	**3,160,567**	**58.03**
Minneapolis-Tulsa	123,118	4,352	1,158,941	26,585	8,024,148	1,780,005	65.11
Minneapolis-Des Moines, St. Louis or Kansas City	70,007	2,770	674,987	5,918	1,552,969	1,380,562	48.89
National Airlines Inc.—**Total**	**355,022**	**9,488**	**4,184,034**	**35,544**	**15,228,948**	**4,551,455**	**91.93**
New York-Key West via Miami	213,501	6,387	2,565,653	14,627	6,789,589	2,767,918	92.69
Jacksonville-New Orleans	141,521	4,237	1,618,381	20,917	8,439,359	1,783,537	90.74
Northeast Airlines Inc.—**Total**	**96,442**	**5,311**	**1,102,898**	**15,989**	**2,975,896**	**2,121,126**	**52.00**
Boston-Presque Isle and Moncton	71,816	4,057	854,473	14,452	2,815,393	1,593,114	53.64
Boston-Montreal	24,626	1,272	248,425	1,537	160,503	528,012	47.05
Northwest Airlines Inc.—**Total**	**714,286**	**17,016**	**11,100,495**	**248,446**	**147,861,695**	**13,622,779**	**81.48**
Chicago-Twin Cities-Seattle; Fargo-Winnipeg	709,390	17,016	11,100,495	248,092	147,810,719	13,622,779	81.48
Minneapolis-Duluth	4,896	0	0	354	50,976	0	.....
Pennsylvania-Central Airlines Corporation—**Total**	**598,918**	**37,039**	**8,185,802**	**618,716**	**132,095,065**	**12,038,233**	**68.00**
Norfolk-Detroit	365,497	26,263	5,343,050	380,053	72,787,910	7,346,713	72.73
Detroit-Milwaukee or Chicago	156,662	10,161	1,945,741	182,862	39,434,657	3,159,664	61.58
Pittsburgh-Buffalo	18,440	880	184,385	9,316	1,570,661	371,257	49.66
Pittsburgh-Birmingham	58,319	2,202	712,626	46,485	18,301,837	1,160,599	61.40
Transcontinental & Western Air, Inc.—**Total**	**1,870,226**	**28,723**	**26,171,963**	**1,402,339**	**738,817,669**	**31,061,126**	**84.26**
New York-Los Angeles	1,249,259	23,398	17,879,011	781,486	509,906,664	21,008,806	85.10
Dayton-Chicago	43,495	2,403	592,028	95,957	23,457,985	769,664	76.92
Winslow-San Francisco	127,459	4,737	1,913,160	46,654	19,757,768	2,124,801	90.04
Kansas City-Pittsburgh via Chicago	321,801	7,711	4,002,572	315,418	153,011,127	4,663,146	85.83
St. Louis-Detroit via Cincinnati and Dayton	58,327	3,389	802,154	124,724	21,035,878	1,133,137	70.79
Washington-Dayton via Columbus	69,885	2,921	983,038	38,100	11,648,247	1,361,572	72.20
United Air Lines, Inc.—**Total**	**2,522,923**	**40,973**	**33,663,944**	**909,995**	**783,316,521**	**35,896,276**	**93.78**
New York-San Francisco	1,868,351	22,211	21,394,229	730,423	697,414,983	22,860,879	93.58
Salt Lake City-Seattle	132,609	4,402	2,432,710	43,404	28,883,176	2,794,829	87.04
Seattle-San Diego	467,177	21,660	8,921,817	123,824	53,458,782	9,179,921	97.19
Seattle-Vancouver	12,032	1,621	218,990	4,693	548,245	245,855	89.07
Washington-Toledo	42,754	957	696,198	7,651	3,011,335	814,792	85.44
Western Air Lines, Inc.—**Total**	**350,248**	**12,901**	**5,707,738**	**104,876**	**49,503,307**	**6,819,869**	**83.69**
San Diego-Salt Lake City	182,217	5,921	3,140,054	81,664	42,313,240	3,513,771	89.36
Salt Lake City-Great Falls	55,772	1,837	649,474	3,542	770,791	1,143,754	56.78
Great Falls-Lethbridge	8,764	473	61,992	351	44,006	176,496	35.12
Los Angeles-San Francisco	103,495	5,129	1,856,218	19,319	6,375,270	1,985,848	93.47
Total	**12,984,844**	**335,534**	**187,312,612**	**6,813,269**	**3,544,858,051**	**223,602,053**	**83.77**
Colonial Airlines, Inc., New York-Montreal—**Total**	**96,608**	**4,407**	**1,369,222**	**13,737**	**4,268,232**	**2,028,768**	**67.49**
Hawaiian Airlines, Ltd., Honolulu-Hilo and Port Allen—**Total**	**76,365**	**9,158**	**1,328,163**	**489,301**	**77,145,985**	**1,401,288**	**94.78**
Grand Total	**13,157,817**	**349,099**	**190,009,997**	**7,316,307**	**3,626,272,268**	**227,032,109**	**83.69**

[1] The total passengers carried for each airline is an unduplicated figure.

[2] Includes mileage and traffic for Syracuse-Cleveland, formerly carried as a separate route.

Operations for first two months of 1945 compared with same period of 1944

Operator	Revenue miles flown January–February		Revenue passengers carried (unduplicated)[1] January–February		Revenue passenger miles flown January–February	
	1945	1944	1945	1944	1945	1944
All American Aviation, Inc.	186,402	160,362	0	0	0	0
American Airlines, Inc.	6,391,876	4,298,339	153,979	112,078	97,640,295	66,124,474
Braniff Airways, Inc.	1,049,151	663,659	41,501	24,645	17,382,321	10,734,606
Chicago & Southern Air Lines, Inc.	628,405	340,425	19,815	12,021	9,016,429	5,433,258
Continental Air Lines, Inc.	486,614	247,901	12,406	6,993	5,039,293	2,228,630
Delta Air Corporation	745,159	440,741	31,745	19,907	12,772,859	8,073,354
Eastern Air Lines, Inc.	3,613,982	2,281,385	106,584	58,782	59,088,993	35,209,232
Inland Air Lines, Inc.	256,220	139,071	8,100	1,892	2,605,281	642,470
Mid-Continent Airlines, Inc.	403,598	335,204	12,982	9,106	3,529,674	2,660,782
National Airlines, Inc.	752,335	410,925	20,205	14,002	8,875,966	4,915,214
Northeast Airlines, Inc.	195,984	142,482	9,937	5,830	2,107,270	1,469,147
Northwest Airlines, Inc.	1,480,414	888,269	34,790	18,491	22,709,518	12,525,730
Pennsylvania-Central Airlines Corporation	1,164,803	503,776	72,048	36,680	15,656,936	8,163,135
Transcontinental & Western Air, Inc.	3,927,633	2,623,217	59,541	45,604	55,433,168	37,193,467
United Air Lines, Inc.	5,257,427	3,997,275	82,361	73,629	69,826,331	60,254,679
Western Air Lines, Inc.	734,435	377,493	26,888	11,959	11,998,104	5,958,788
Total	27,274,438	17,850,524	692,882	451,619	393,682,438	261,586,966
Index (1943 = 100)	152.79	100.00	153.42	100.00	150.50	100.00
Colonial Airlines, Inc.	201,786	111,316	8,614	5,819	2,717,132	1,791,776
Hawaiian Airlines, Ltd.	162,615	146,143	19,944	17,149	2,863,078	2,442,766
Grand Total	27,638,839	18,107,983	721,440	474,587	399,262,648	265,821,508
Index (1943 = 100)	152.63	100.00	152.01	100.00	150.20	100.00

Operator	Express carried (pounds) January–February		Express pound-miles flown January–February		Passenger seat-miles flown January–February		Revenue passenger load factor (percent) January–February	
	1945	1944	1945	1944	1945	1944	1945	1944
All American Aviation, Inc.	15,494	15,372	2,701,558	2,304,130	0	0	.....	.....
American Airlines, Inc.	4,695,127	3,280,095	2,143,317,342	1,474,216,277	113,560,741	75,572,520	85.98	87.50
Braniff Airways, Inc.	305,661	148,352	146,344,584	69,954,204	20,823,829	11,634,162	83.47	92.27
Chicago & Southern Air Lines, Inc.	291,364	136,933	120,457,853	56,501,207	12,949,967	6,747,814	69.63	80.52
Continental Air Lines, Inc.	73,350	18,784	34,808,639	8,811,802	6,693,929	2,702,697	75.28	82.46
Delta Air Corporation	213,991	131,374	83,660,841	51,592,124	15,234,883	8,989,848	83.84	89.81
Eastern Air Lines, Inc.	1,325,838	737,911	765,399,719	478,636,630	69,224,537	40,344,145	85.36	87.27
Inland Air Lines, Inc.	12,057	4,423	3,017,414	1,041,266	4,122,006	977,226	63.20	65.74
Mid-Continent Airlines, Inc.	63,448	32,022	19,103,995	7,979,107	6,333,009	4,191,349	55.73	63.48
National Airlines, Inc.	74,586	60,557	31,331,677	19,479,584	9,811,523	5,598,776	90.46	87.79
Northeast Airlines, Inc.	34,122	21,630	6,230,379	3,760,188	4,306,224	2,992,122	48.94	49.10
Northwest Airlines, Inc.	503,462	322,448	285,942,198	166,265,100	28,296,172	15,711,576	80.26	79.72
Pennsylvania-Central Airlines Corporation	1,152,173	626,433	235,722,319	111,967,686	23,378,211	10,457,811	66.97	78.06
Transcontinental & Western Air, Inc.	2,821,865	1,722,746	1,485,970,080	867,421,736	65,713,012	42,981,342	84.36	86.53
United Air Lines, Inc.	1,865,291	1,588,554	1,470,433,988	1,164,806,697	74,974,947	63,596,610	93.13	94.75
Western Air Lines, Inc.	215,866	149,354	100,850,087	81,566,091	14,478,756	7,340,671	82.87	81.17
Total	13,663,695	8,996,988	6,935,292 673	4,566,303,829	469,901,746	299,838,669	83.78	87.24
Index (1943 = 100)	151.87	100.00	151.88	100.00	156.72	100.00	96.03	100.00
Colonial Airlines, Inc.	30,516	27,878	9,564,878	8,379,102	4,237,008	2,337,636	64.13	76.65
Hawaiian Airlines, Ltd.	1,057,752	1,026,189	165,008,793	162,854,799	3,022,464	2,617,560	94.73	93.32
Grand Total	14,751,963	10,051,055	7,109,866,344	4,737,537,730	477,161,218	304,793,865	83.67	87.21
Index (1943 = 100)	146.77	100.00	150.08	100.00	156.55	100.00	95.44	100.00

	January	February	Total
Passengers carried (unduplicated) total revenue and non-revenue[1]			
16 domestic airlines	364,641	343,221	707,862
Total airlines	379,714	356,856	736,570
Passenger miles flown (total revenue and non-revenue)			
16 domestic airlines	209,239,114	190,119,942	399,359,056
Total airlines	212,143,608	192,836,428	404,980,036

[1] Preliminary. Due to the delay in reporting by some companies, these figures are subject to revision in subsequent publications.

CAA Examining Physicians

The following physicians were named during March by the Civil Aeronautics Administration to perform physical examinations:

Donald J. Feerer, 117 West Seventh St., Michigan City, Ind., M. G. Bourne, 118 North Moore, Algona, Iowa; L. J. Beyer, Lyons, Kan.; William H. Brennen, Middlesboro Hosp., Middlesboro, Ky.; Clement S. Wilson, 159 Park Row, Brunswick, Me.; John S. Anderson, 400 Oak, City Hospital, Gordon, Neb.; Henry Frank Riedel, 8203 North Denver Ave., Portland, Ore.; Haskel L. Maier, 749 Market Street, Tacoma 2, Wash., and Austin G. Dunn, 111½ Strongs Ave., Stevens Point, Wis.

Pilot Disregards Weather Dies in Airplane Crash

Disregard of weather reports is given as the probable cause of the death of Merle R. Harvey of Kansas City, Mo., in an airplane crash near Lawrence, Kan.

Harvey, 41, held a private pilot certificate, and had logged about 250 hours, all in the type of plane involved, when he took off from Kansas City for flight to Dill, Okla.

According to an instructor at the airport, Harvey was asked just before he took off if he had checked on the weather and he went into the pilot's office for the data. He indicated to the instructor he had obtained it and took off, though reports showed zero-zero conditions.

Board Holds Hearings

The Civil Aeronautics Board has heard arguments on the application of Braniff Airways and T. E. Braniff for approval of the acquisition of Aerovias Braniff, S. A.

The Board has also held hearings on the application of National Airlines for authority to establish non-stop service between Jackonsville and Miami.

United Cuts Fare Rates

United Airline has announced a 10 percent reduction one-way passenger fares with a five percent discount on round trips. If approved by the Civil Aeronautics Board the new rates will be effective May 1.

United points out the reduction is not intended to stimulate air travel, but as a dividend for passengers.

Buzzing Train.—While "buzzing" a railroad train, Robert Franklin Hagler of Carlsbad, N. Mex., collided with a high-tension line and was fatally injured.

Hagler held a student certificate and had accumulated about 16 hours of solo flight time. He was a freight conductor on the Santa Fe Railroad and was one of three train crew members who were taking flight instruction.

Investigation revealed no indication of malfunctioning or failure of any part of the aircraft prior to impact. The power line was located among trees and brush, which tended to obscure it from view.

Low Flying.—While flying low to signal a friend, Leroy Zipse, student pilot of New Hampton, Iowa, crashed and was fatally injured.

Zipse had 13 hours solo flying time. He had made his first cross-country flight, accompanied by an instructor on the day preceding the accident, but he had not been approved to fly cross-country solo. On the day of the accident he took off solo on an unauthorized cross-country flight to his home. A few minutes later his plane was observed flying about 100 feet above a farm on which a friend was working. As the plane approached, the altitude was decreased to about 50 feet and the friend recognized Zipse, who waved to him. Immediately afterward the plane started a climbing turn to the left during which the nose dropped and the plane dived to the ground. It caught fire instantly and was destroyed.

Faulty Handling. — Becoming alarmed about the condition of his plane after encountering turbulent air, Franklin D. Sturdy, Hinsdale, Ill., attempted to land near West Walworth, N. Y. His plane nosed over and Sturdy was seriously hurt.

Examination revealed that no part of the plane had failed to function prior to the accident, and the ground was firm enough for a landing. Marks indicated the brakes had not been applied smoothly.

In the absence of more specific evidence it appears the probable cause of the accident was the pilot's faulty handling of the plane during the landing and the roll.

Engine Stoppage. — Following engine stoppage, Pilot George R. Stubblefield, Waterloo, N. Y., crashed near Syracuse, N. Y., Airport with resultant fatal injuries to himself and his passenger.

Investigation of the wreckage revealed pieces of dried gasket cement in the carburetor, which apparently caused the engine failure.

When maneuvering for landing, after the engine began to cut out, the pilot overshot the field and turned in an attempt to land cross-wind. This maneuver was started too late and the plane crashed into trees.

Low Flying. — Blair Thaw Alderman, Eugene, Ore., lost control of his plane while circling at a low altitude and waving to friends on the ground. He was seriously injured and his plane was destroyed.

Alderman held a private pilot certificate and had flown approximately 133 hours. Examination of the wreckage revealed no indication of failure of any part of the aircraft prior to impact.

Poor Maintenance.—Frederick S. Frank, Walla Walla, Wash., was fatally injured when the airplane he was test flying dived to the ground and burned after the engine stopped shortly after taking off.

He had taken off once before and the engine had stopped at about 30 feet. Frank sideslipped and made a normal landing. After flushing gasoline through the fuel line, he took off for a test flight. At 200 to 300 feet the engine again stopped and the airplane stalled. It fell off to the left and crashed. Fire broke out instantly.

Evidence indicated that the plane was poorly maintained, and much work had been done on it by persons who were not aircraft or engine mechanics. A pilot had overhauled the magneto and installed a home-made bushing which was still in service at the time of the accident. The throttle rod arm had been cut by a hacksaw until it was too short for proper service.

Experience has shown that a steep climb in this type plane, while using gas from the center main tank and with the fuel level in the tank below 20 gallons, may cause engine failure. A test with a similar type plane resulted in the same type engine failure as occurred in the accident. The evidence indicates that the amount of fuel in the tank of Frank's plan may have been less than 20 gallons.

Low Flying.—Instructor Cloyd E. Litle, Johnson City, Tenn., while flying low near Bristol, Tenn., struck electric wires and fell to the ground. He and his student, George Lee Selby, Blountville, Tenn., were seriously injured. The aircraft was demolished.

Litle held a commercial certificate and flight instructor rating, and had flown about 1,309 hours. Selby was not certificated.

Litle and Selby stated that "S" turns, made just prior to the accident, were made at 600 feet, but their statements were not borne out by witnesses. A farmer declared that the plane repeatedly flew so low over his farm that he feared his livestock would be hit.

Uncleared Landing.—An aircraft piloted by John W. Rorabeck, Delphos, Ohio, crashed while landing without clearance at the Cleveland, Ohio, Municipal Airport. The pilot was unhurt, but the plane was seriously damaged. Rorabeck held a student certificate with 58 hours flying time.

He attempted to land at a controlled airport without permission, and did not follow the traffic pattern. He said he was making a "regular landing" but added that "no signal was received from the tower."

Rorabeck's plane, during the course of landing, was being rapidly overtaken by two Army planes. The tower operator instructed the Army pilots to pull up and go around again. They complied immediately. According to witnesses, the propeller blast of the lead Army plane caught Rorabeck's aircraft, just as it was about to land and spun it around. The plane hit the ground on the left wing tip, nose and landing gear, rolled to the right wing and came to rest upright.

Maneuvered Too Low.—Kenneth Arnold Richardson, student pilot with 100 hours' flying time, was fatally injured near Charter Oak, Iowa, during a practice flight.

Taking off from the airport, he disappeared in the direction of his assigned practice area. A few minutes later he landed near the farm home of a friend and made four or five flights with passengers. Afterwards he took off into a south wind of 15 to 20 mph, and at an altitude of 60 to 75 feet, dangerously low, made a steep turn to the left. Witnesses stated that immediately after stopping the turn, the pilot attempted to climb. The plane stalled and dived to the ground.

Lost Control. — While maneuvering for an emergency landing following engine failure, Pilot Robert Van Brocklin, Cordova, Alaska, lost control of his plane and crashed in Eyak Lake, near Cordova City Airport. The pilot was killed and his passenger, William Miller, of Cordova, was seriously injured. The plane was damaged extensively.

Van Brocklin held a private pilot certificate and had flown about 202 solo hours. Miller was not a pilot.

Upon reaching an altitude of about 300 feet after take-off, the engine stopped abruptly and the pilot made a steep right turn back toward the airport. The plane, still in a steep right turn, stalled and fell off into a right spin. The plane struck the water nose-first.

Struck Tree. — Peter Joseph Schmitt, Williamsville, N. Y., struck a tree and crashed while attempting a landing near Holsopple, Pa. The pilot was fatally injured and his plane destroyed.

Schmitt held a private certificate and had approximately 375 hours of flying time.

Radar

(*Continued from page 37*)

the Civil Aeronautics Administration, but its weight and cost made it prohibitive for general use. Wartime needs have speeded up refinements and practical application is considered far nearer.

Safety and 100 per cent regularity in air transportation require that the pilot be able to protect himself from collision in all weather. There will be too much traffic and too little time for a control system on the ground to handle it all. Even now, excessive delays are being caused by the partial obsolescence of the radio-voice system.

In actual operation of the collision instrument, the pilots would be responsible for proper vertical separation between airplanes while climbing, while holding at fixes, and while being "stepped down" over a range during approaches.

Using a collision warning device, the letting down routine of each aircraft could be handled by the pilot. This would mean that the control tower would act as a monitoring agent through its radar screening device. The accumulated time-saving over a period of bad weather would be considerable.

Aircraft taking off, and climbing to assigned levels would maintain their own separation, and during the period of level flight along the airway, the warning device would signal the presence of other aircraft.

Sponsored Instruction Of Young Men For Aviation Careers Becomes Global

Evidence of the increasing appreciation of the importance of global aviation in any postwar planning is shown by the establishment of training courses to fit young Chinese and Englishmen for positions in every branch of the industry.

The most recent to enter the field, in which the Civil Aeronautics Administration pioneered with its Inter-American Aviation Training Program in 1942, is the Foreign Economic Administration which is sponsoring training of Chinese boys in aviation subjects.

CAA Advises. — Five of a group of 43 Chinese who are to study aviation in the United States have arrived and will be assigned to training centers on the advice of the Civil Aeronautic Administration.

They are to be trained in the United States under the auspices of the Foreign Economic Administration, with the International Training Association of Washington, D. C. supervising.

The 43 who are to receive training in various sections of the aviation industry will be assigned to schools, airports, business organizations, departments of the Civil Aeronautics Administration, and the suggestions of the CAA's Assistant Administrator A. S. Koch, in charge of international relations, will be considered when assignments are made.

British Industry Sponsor.—In some particulars the English plan for training boys, who will man the aviation industry, is similar to the CAA Inter-American Aviation Program. As outlined by the Society of British Aircraft Constructors, Ltd., which sponsors it, the boys selected will be financed, trained in factories and given the opportunity for specialized education. The British Society in its announcement notes: "As the S.B.A.C. scholarship scheme progresses, in due time a batch of 'brainy boys' will be moving up the ladder to the highest appointments the industry can offer."

Such progress has already started for many Central and South American youths. Recently a group of 49 of them started for home, having completed the factory phase of their training. Under the CAA training program they had been assigned to aviation plants for practical experience, and were paid the going wage for the work they did. They are fitted for positions of importance and trust in the aviation industry of their native lands and in addition each earned a substantial sum of money while learning.

The importance which the English aircraft industry attaches to technical education and to the need for enlisting in its ranks "boys with brains" is indicated in the announcement of seven scholarships in the aircraft industry in the ninth year of a scheme financed by the Society of British Aircraft Constructors.

Plan Nation-wide.—"Nation-wide applications were received from boys who have shown evidence of proficiency in their school work and for special aptitude in mechanical engineering or mathematics," the announcement reads. "The scholarships are designed specifically to assist financially boys of at least matriculation standard who would otherwise not be able to take up a career in the aircraft industry. A certain number of scholarships are also awarded to boys already in the factories who show ability worthy of special encouragement.

CAA Aids Students

Chinese boys will be assigned to training centers on advice of the CAA. Shown in the illustration are Liu Mou-Che, who will study structural flight engineering, and Hsu Shou-Peng, administration problems incidental to aviation. With the boys are A. S. Koch, CAA Assistant Administrator and Alfred Hand, consultant.

Four-Year Course.—"Each scholarship holder is expected to attend technical classes, under the guidance of the firm which accepts him as an apprentice. His time, usually four years, is spent with one of the leading aircraft or aero-engine companies in the workshops and in the drawing office. Some candidates graduate to special work in the research and experimental departments.

"Most of the foremost British aircraft constructors sponsor post-apprenticeship courses at Universities. These encouragements to technical proficiency extend to grants of as much as 350 pounds (about $1,500) a year for a three-year degree course in technical subjects at a University."

RECENT CAA RELEASES

Copies of matter released by the Civil Aeronautics Administration are obtainable from the CAA Information and Statistics Service, Department of Commerce Building, Washington 25, D. C.

Airports—For Boston and the Nation; address by William A. M. Burden, Assistant Secretary of Commerce, before the Aeronautical Association of Boston.

Postwar Civilian Aspects of the Helicopter; address by Charles I. Stanton, CAA Assistant Administrator, before the American Helicopter Society at Bridgeport, Connecticut.

Field Agents of CAA Report Big Increase Of Flight Trainees

A pronounced increase in the number of applicants for flight training is noted by the Civil Aeronautics Administration in reports from its field personnel.

Youngsters of 16 to 21, who hope to use their training in the war effort, and men of more than 30 who plan to fly in their business predominate, this informal survey indicates.

The older group includes many country doctors and priests, according to W. E. Kline, CAA Regional Manager in Kansas City, while farmers are reported active in the Harrisburg, Pennsylvania district by CAA Inspector R. K. Alexander.

War Workers Interested.—Estimates of the number of women among the trainees vary from 15 to 35 per cent. Some are war workers who have become interested in aviation, and financially able to participate in it, through their jobs. Others owe their interest to a family member in the air forces.

In all, more than 51,000 student pilot certificates were issued by the CAA in 1944, which compares with less than 35,000 issued in 1943 to students outside the CAA War Training Service program, since terminated. Even on the West Coast, where War Department restrictions forced many trainees to travel 150 miles or more inland, some 3,400 student certificates were issued in 1944, about 35 per cent of them to persons living within the restricted zone.

Take Schools to Pupils.—Spreading flight training to the grass roots, most of the operators in the Kansas City region have been sending instructors with one aircraft to communities of 500 to 1,000 population, where they instruct five to ten students. This has increased their revenue not only from instruction, but in many cases from sales of aircraft to these students after they have qualified for private pilot certificates. (No new civil aircraft are being manufactured for private use, but 5,000 surplus planes from the War Training Service have been sold in the last six months, many to operators who have reconditioned and resold them.)

Many new airports have been established by training school operators. L. C. Elliott, CAA Regional Manager at Fort Worth, Texas, reports that in his region the number of designated landing areas (those approved under wartime regulations) has increased from 195 on Jan. 1, 1944, to 251 on Jan. 1, 1945. Most of these fields, Elliott says, are in outlying towns where there has been no previous aviation activity.

Mechanics Hard to Get.—Chief difficulty of the operators seems to be obtaining qualified mechanics. Pilot-instructors beyond draft age are available since closing of the War Training Service program, and there has been some easing in the replacement parts situation.

While seasonal decreases in activity because of snow-covered airports are reported from many northern sections of the country, the CAA Inspector T. A. Davis at Concord, New Hampshire, says that several operators in his district solve the problem by opening seaplane bases.

Airline Orders

Service

No. 3513 orders consolidation of applications for certificates in the Southeastern case for supplying air transportation to the southeastern part of the United States. (Feb. 24)

No. 3520 grants application of American Airlines for consolidation of Routes 7 and 21 and portion of Route 23. (Jan. 24)

No. 3521 dismisses applications of R-B Freight Lines, Chicago, and Calumet District Transit Co., Mercury Development Corp., and Hogan Flying Service. (Mar. 3)

No. 3522 dismisses application of Aeronaves de Mexico, S. A. for a certificate. (Mar. 3)

No. 3523 denies petitions of the Cities of Birmingham, Ala. and Nashville, Tenn., to intervene in applications for certificates to authorize additional air service in Mexico, Central and South America and the Caribbean area. (Mar. 3)

No. 3524 denies application of State Airlines to amend its applications for certificates. (Mar. 3)

No. 3525 grants permission to the City of Charleston, S. C., to intervene in applications for certificates in Docket No. 570. (Mar. 3)

No. 3526 grants Eastern Air Lines permission to intervene in the appplication of National Airlines for authority to inaugurate non-stop service between Jacksonville and Miami. (Mar. 6)

No. 3536 grants permission to the State of Minnesota to intervene in the applications of Automatic Air Mail and others for certificates in the North Central Case. (Mar. 9)

No. 3537 denies petition of Hannaford Airlines to intervene in the application of the Automatic Air Mail and others for charters in the North Central Case. (Mar. 10)

No. 3538 grants request of Dixie Motor Coach Corp., dismissing its applications in Dockets 1077 requesting consolidation into the Texas-Oklahoma proceedings. (Mar. 12)

No. 3539 dismisses application of Plaza Express Co., contained in Docket 1626 in the North Central Case. (Mar. 12)

No. 3540 dismisses application of National Airlines in Docket 1107, for certificate. (Mar. 12)

No. 3546 dismisses application of Western Air Lines, in Docket 384, for certificate. (Mar. 12)

No. 3547 grants permission to American Airlines and Chicago and Southern Air Lines to intervene in the nonstop notice of Transcontinental & Western Air, Docket 1715. (Mar. 12)

No. 3549 approves agreement by and between City and County of Denver, Continental Air Lines, United Air Lines and Braniff Airways relating to a lease of a field post office at the Denver Municipal Airport to the named carriers. (Mar. 15)

No. 3550 approves agreement by and between United Airlines and Inland Air Lines relating to subleasing ticket office and cargo space to Inland at the Cheyenne Municipal Airport. (Mar. 15)

No. 3551 approves interlocking relationship of Frank M. Donohue and All American Aviation. (Mar. 15)

No. 3552 denies petitions of Delta Air Corp., the City of El Dorado, Ark., the C. of C. of Monroe-West Monroe, La., and jointly the Cities of Little Rock and El Dorado, Ark., for reconsideration of the Board's opinion and order No. 3400. (Mar. 16)

No. 3553 notifies Western Air Lines, Inc., that the national defense no longer requires delaying inauguration of property and mail service between Los Angeles, Calif., and Denver, Colo. (Mar. 19)

No. 3554 temporarily exempts Chicago and Southern Air Lines, Inc., from certain provisions of the Civil Aeronautics Act of 1938 insofar as they might prevent Chicago and Southern from engaging in air transportation to and from El Dorado, Ark., as an additional intermediate point on route 53. (Mar. 14)

No. 3557 temporarily exempts Delta Air Corporation from the provisions of section 401(a) of the Act insofar as the provisions would otherwise prevent Delta from serving Dayton, Ohio, in lieu of Cincinnati, from March 5 until such time as flood conditions on the Ohio River have terminated and the airport at Cincinnati is available for operations. (Mar. 23)

Miscellaneous

No. 3555 dismisses the complaint filed by Cordova Air Service, Inc., against Alaska Airlines, Inc., under section 404(a), 1002(a), 1002(i) of the Civil Aeronautics Act of 1938.

No. 3556 orders that the operation of certain tariffs establishing the Universal Air Travel Plan discounts and Government Travel discounts, insofar as they apply to interstate or overseas air transportation, be suspended, and that the use of said discounts be deferred for 90 days unless otherwise ordered by the Board. (Mar. 22)

Airman Orders

Suspensions

No. 3514 suspends private pilot certificate of Charles Corey Doughty for 60 days. Board finds he flew airplane with passenger at functioning dual controls and swooped to within 50 feet of ground. (Feb. 23)

No. 3517 suspends mechanic certificate of Glen Paul Cox for 30 days. Board finds he represented aircraft in airworthy condition when such was not the fact. (Feb. 27)

No. 3519 suspends mechanic certificate of Anthony Germana for 60 days. Board finds he failed to safety all the bolts on control system when he made periodic inspection. (Feb. 27)

No. 3530 suspends student pilot certificate of George O'Neal Wegener for 90 days because he took off on a pleasure flight without sufficient oil and flew at an altitude of less than 500 feet in the vicinity of Nashua, Mo. (Mar. 6)

No. 3531 suspends student pilot certificate of William Joseph Dorrity for 90 days. Dorrity made a cross-country solo flight without being certified for same and landed in an undesignated area in the vicinity of DeBorgia, Mont. (Mar. 6)

No. 3532 suspends private pilot certificate of James Albert Carr for 90 days. He flew an aircraft after sunset between Lordsburg, N. Mex., and Phoenix, Ariz., without its being equipped for night operation. (Mar. 6)

No. 3534 suspends private pilot certificate of Sebastino Frank Greco for 60 days and thereafter until he passes the required flight test and also delivers his student pilot certificate to the CAA for cancellation. Grego flew within 20 feet of the ground over Clear Ridge Airport, Omaha, Nebr. (Mar. 6)

No. 3535 suspends commercial pilot certificate of Lewis Burr Porterfield Jr. for 60 days because he flew at less than 1000 feet over a crowd; attempted to take off from a field in the vicinity of Martinsburg, W. Va., when there was hazard of colliding with another craft; and tried to take off from an undesignated landing area. (Mar. 6)

No. 3545 suspends student pilot certificate of Austin Kinzey Veatch Jr. for 60 days. Veatch flew at an altitude of less than 500 feet in the vicinity of Clinton, Okla. (Mar. 12)

Revocations

No. 3515 revokes student pilot certificate of Lawrence Benjamin Stogner Jr. for carrying person not certified instructor during a flight in the vicinity of Hartsville, S. C. (Feb. 27)

No. 3516 revokes student pilot certificate of John Lawrence Easterling Jr. for carrying person not certified instructor during a flight in the vicinity of Hartsville, S. C. (Feb. 27)

No. 3529 revokes the student pilot certificate of Clyde R. Hudson because he attempted to take off from the Salamanca, N. Y., Airport with a passenger. (Mar. 6)

No. 3533 revokes commercial pilot certificate, with flight instructor rating, of Gerald Kenneth Halverson because he falsified entries regarding flying time in this logbook. (Mar. 6)

No. 3541 revokes James Culler's student pilot certificate for carrying a passenger and violating other sections of the Civil Air Regulations. (Mar. 12)

No. 3542 revokes student pilot certificate of Jackie Kern Morgan who landed and took off from an undesignated landing field; carried a passenger and violated other sections of the Civil Air Regulations. (Mar. 12)

No. 3543 revokes private pilot certificate of Alva Duane Nicholas for carrying passengers for hire. Nicholas also carried two passengers, in addition to himself, in a two-place plane and operated the same plane while carrying a load about 50 pounds in excess of allowable weight. (Mar. 12)

Waivers

No. 3527 denies request of H. Goodwin for waiver of certain provisions of the Civil Air Regulations. Goodwin wished to obtain a pilot certificate without completing the required examinations. (Mar. 6)

No. 3528 denies request of Mary E. McPharland to waive age requirements of the Civil Air Regulations. (Mar. 6)

No. 3548 denies request of Newell M. Holifield to waive provisions of the Civil Air Regulations insofar as they require that an applicant for a private pilot certificate be able to read, speak, and understand the English language. (Mar. 16)

Miscellaneous

No. 3544 dismisses the complaint against Ira Thomas L'Anglois, holder of student pilot certificate, accusing him of flying at an altitude of less than 500 feet in the vicinity of Madison, Wis. (Mar. 12)

No. 3518 dismisses complaint against William Brisch, holder of commercial pilot certificate. (Feb. 27)

Regulations

Reg. 333.....*Effective March* 12, 1945

After October 31, 1945, the fuel systems of all air carrier aircraft equipped with more than one engine shall be so arranged as to permit their operation in such a manner that the failure of any one component of a fuel system will not cause the loss of power of more than one engine.

Reg. 334.....*Effective March* 20, 1945

AMENDMENT NO. 4 OF SECTION 292.2 OF THE ECONOMIC REGULATIONS—ALASKAN AIR CARRIERS

Effective March 20, 1945, paragraphs (e) and (f) of Section 292.2, as amended, of the Economic Regulations are hereby amended to read as follows:

(e) *Place of filing.* Notwithstanding the requirements of any other regulation, order, or rule of the Board, all documents authorized or required by the Civil Aeronautics Act, or any regulation, order, or rule of the Board issued thereunder, to be filed with the Board by any Alaskan air carrier or in connection with air transportation performed or sought to be performed by such carrier shall be filed with the Alaska Office of the Board: Provided, however, that applications, motions, petitions, and briefs to the Examiner, in formal proceedings filed through counsel having addresses outside of Alaska may be filed with the Board at its office in Washington, D. C., in which event one signed copy (being one of the duplicate originals specified in subsection (f) of this section) of each such document shall be sent by air mail to the Director of the Alaska Office, in Anchorage, Alaska, by the counsel so filing.

Time of filing. The date of filing of a document shall be the date on which the document is filed in accordance with this regulation, either in the Washington Office or the Alaska Office of the Board.

(f) *Duplicate originals required.* In addition to the number of copies of each document required to be filed by the regulation, order, or rule under which it is filed, one additional signed copy shall be filed, and if the regulation, order, or rule under which it is filed requires verification of documents filed thereunder, said additional signed copy shall also be verified. Two signed copies will constitute duplicate originals. In the event both copies are filed with the Alaska Office Office shall transmit one signed copy to the office of the Board in Washington, D. C., and retain the other signed copy in the files of the Alaska Office.

Announces Consolidation Of American's Routes

Amendment of American Airlines' certificates for routes 7, 21 and 23 is announced by the Civil Aeronautics Board. Routes 7 and 21, and that portion of route 23 pertaining to service between New York-Newark and Albany, are now designated as route 7.

American's certificates for route 7 was further amended to eliminate Windsor, Ontario, so international service provided for in Section 801 of the Act might be separated from its domestic service. Service to Windsor will be covered by a separate certificate.

Wallace

(*Continued from page 37*)

workers will be supported directly or indirectly by civil aviation. The total revenues of the civil aviation industry—manufacturing and transport—were this goal reached, would be some one billion, seven hundred million dollars.

"The aircraft industry will work for this expansion with its customary resourcefulness and energy. But the goal can only be achieved if the government lends a helping hand in those spheres of activity which are its legitimate concern and particularly in those phases of civil aviation which are still in an early stage of development.

Airports Most Important.—"The most important single item in a well-balanced program for civil aviation development is the airport construction program which is before your committee. You are showing commendable foresight in considering the subject of civil airports at this time. Only after national policies are determined and the amount of Federal aid indicated by appropriation can the States and communities make their own plans for participation in airport construction. The planning of airport projects is a lengthy process, and the actual construction of runways and buildings requires substantial additional periods of time. The airport program laid before you in the CAA's report of last November will be refined and modified in future annual revisions, but the initial planning can and should begin soon. Prompt authorizing legislation followed by the appropriation of adequate funds for the preparation of plans is necessary. The rate of actual construction, and the time when it is to start will, of course, be determined by the Congress by the appropriations which it grants later to actually implement the program. The size of the appropriations will naturally be governed by the financial condition of the nation and the apparent aeronautical requirements at the time.

"The vital thing now is to establish a sound and progressive national policy in this all-important field by the passage of basic Federal-aid airport legislation."

Discussing the specific CAA program, Mr. Burden said:

"It has been developed with care in accordance with sound principles. In size it is modest in comparison with the growth in aviation which can reasonably be expected and with the proposed Federal programs in the other fields of transport. For example, the proposed annual Federal expenditure on airports (over a 10-year period) would be $62,500,000 as compared to 100 millions annually for rivers and harbors and 500 million annually for highways.

"The plan does not purport to be a detailed and completely documented solution to the nation's airport needs over the next 10 years. It must be refined and developed—and an authorization for funds for this purpose is provided in the legislation before you—and it must be revised annually as aviation develops.

"But there is, I believe, an unquestioned need for the 3,000 airports which we propose for construction over the next decade.

System Deficient.—"The present system is seriously deficient. Airport construction during the war has been concentrated on very large airports often located largely with an eye to military requirements. Our present airport system could barely accommodate physically the number of civil aircraft which can be expected during the first two or three postwar years. Moreover, in a large number of cases existing airports are so inadequately planned and so inconveniently located as to prove a serious obstacle to the expansion of civil aviation.

"The proposed expansion is necessary not only to cure existing deficiencies but second, and equally important, to stimulate the development of civil aviation by creating the fundamental ground facilities which will be necessary to make feeder-line, taxi, charter, and personal flying conveniently available and therefore useful to a large part of our population.

"In addition to the obvious *need* for an expansion and modernization of our network of civil airports, there is, I believe, sound *economic justification* for the construction program which will be laid before you.

"The creation of these airports will greatly improve the means of transportation available to our citizens.

"Their building is an essential step in the development of a civil aviation industry which *can* create employment for 400,000 persons in the next eight to ten years.

"If the expected expansion in aircraft use is realized, charges to aircraft users, combined with airport revenues from auxiliary services will, within a short period, cover the operating expenses of the airports constructed.

"There is every reason to expect that within a reasonable period thereafter the program will prove self-liquidating, as has our highway program.

"The airports when constructed will provide permanent employment for 80 to 100 thousand persons.

"The construction of the airports will provide, 1,250,000 man-months of temporary employment."

Others heard on the bills include John H. Wilson, Executive Secretary of the National Aviation Trades Association, who said the legislation was necessary to the growth of private flying and to the creation of opportunities for small business in the aircraft service field; Dudley Steele, Manager of Lockheed Air Terminal; Mayors LaGuardia and Kelly (by a representative) of New York and Chicago respectively. The schedule of witnesses also listed spokesmen for the State Governors, the Aeronautical Chamber of Commerce, and the American Roadbuilders Association.

AIR REGULATIONS . . . As of April 1, 1945

Title	Part No.	Price: Part	Price: Manual	Date Latest Edition: Part	Date Latest Edition: Manual	No. Amendments Issued: Part	No. Amendments Issued: Manual
Aircraft							
Airworthiness Certificates	01	$0.05	None	10/15/42	None	[2] 1	.....
Type and Production Certificates	02	.05	None	3/1/41	None	.....	.....
Airplane Airworthiness	04	.15	[1]	11/1/43	2/1/41	2	5
Engine Airworthiness	13	.05	None	8/1/41	None	.....	.....
Propeller Airworthiness	14	.05	[1]	7/15/42	12/1/38	.....	.....
Equipment Airworthiness	15	Free	$0.10	4/15/44	7/1/38	.....	.....
Radio Equipment Airworthiness	16	0.05	Free	2/13/41	2/13/41	.....	1
Maintenance, Repair, and Alteration of Aircraft, Engines, Propellers, Instruments	18	.05	0.50	9/1/42	6/1/43	.....	.....
Airmen							
Pilot certificates	20	.10	None	2/15/44	None	6	.....
Airline Pilot Rating	21	.05	None	10/1/42	None	3	.....
Lighter-than-air Pilot Certificates	22	.05	None	10/15/42	None	.....	.....
Mechanic Certificates	24	.05	None	7/1/43	None	.....	.....
Parachute Technician Certificates	25	.05	None	12/15/43	None	.....	.....
Traffic Control Tower Operator Certificates	26	.05	None	2/1/44	None	.....	.....
Aircraft Dispatcher Certificates	27	.05	None	10/1/43	None	.....	.....
Physical Standards for Airmen	29	.05	None	6/1/42	None	2	.....
Air Carriers							
Air Carrier Operating Certification	40	.10	None	10/10/44	None	.....	.....
Air Agencies							
Flying School Rating	50	.05	Free	11/1/40	12/40	3	2
Ground Instructor Rating	51	.05	None	12/15/43	None	.....	.....
Repair Station Rating	52	.05	Free	10/1/42	2/41	.....	.....
Mechanic School Rating	53	.05	[3]	8/1/42	5/40	.....	.....
Parachute Loft Certificates and Ratings	54	.05	None	1/21/43	None	.....	.....
Air Navigation							
Air Traffic Rules	60	.10	0.15	8/15/44	8/1/43	3	.....
Scheduled Air Carrier Rules	61	.10	None	2/1/44	None	2	.....
Foreign Air Carrier Regulations	66	.05	None	3/1/42	None	.....	.....
Miscellaneous							
Definitions	98	.05	None	10/15/42	None	.....	.....
Regulations of the Administrator							
Aircraft Registration Certificates	501	Free	None	3/31/43	None	.....	.....
Recordation of Aircraft Ownership	503	Free	None	3/31/43	None	.....	.....
Seizure of Aircraft	531	Free	None	12/8/41	None	.....	.....
Regulations Governing the Distribution and Use of Aviation Gasoline	534	Free	None	9/16/44	None	.....	.....

[1] Out of stock. [2] Special regulation No. 223.

Note: Those parts and manuals for which there is a price are obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances must be by cash or by money order, payable to the Superintendent.

Helicopters

(*Continued from page* 41)

planes, and in many cases the helicopter will do them better. Certain types of photography, particularly low-level shots of single buildings, and other relatively small targets can be done best from a stationery vehicle in the air; dusting of small areas such as stagnant pools, small fields surrounded by high obstructions, and other pocket-like areas, fall automatically into the performance ability of the helicopter.

For Rescues.—"Rescue work, which is now one of the duties of the helicopter pilots in the Coast Guard, will continue to be important in peace time. Relief of stricken areas in times of the inevitable floods, fires, and other disasters, will be work for the flying windmills. It is not difficult to imagine many instances when helicopter delivery of a doctor, and medical supplies, will mean the saving of a life, or many lives, as has already been the case several times.

"In the widespread range country of our western states, the helicopter may be of great value in spotting cattle on range, finding lost herds, taking census counts of wild animal groups, such as elk, mountain goat, not to mention the extermination of coyotes.

"Sportsmen will find the helicopter invaluable as a means of quick transportation to fishing and hunting paradises so difficult to reach on foot, so time-wasting by canoe and portage. Lakes so deep in the forest that they are still almost unknown to the fisherman's rod can become the long sought vacation spot of the heli-pilot.

Sentries in the Sky.—"In the duties of national conservation, the helicopter can be used as a flying sentinel over our national forests. Fire-fighting equipment, personnel, and extinguishing supplies can be unloaded at tree top height, or lower, by the helicopter. It is done now by airplane, but I can visualize a helicopter doing it better. It is not impossible that eventually a helicopter may become, in itself, a flying fire engine, carrying bombs filled with chemical solutions to smother fire without any of its crew dropping to the ground as now they must.

"And feeder lines services — if the CAB were to approve every application it has received for helicopter feeder line services, the air would be so crowded there would be no room for the old-fashioned people who still might want to fly their own airplanes.

"Among the many problems the coming of the helicopter brings to the CAA traffic regulation is one of the high hurdles.

"It will be the duty of the CAA to insure the safety of both helicopters and fixed-wing pilots without imposing any nuisance restrictions on either," said Mr. Stanton.

"We must weigh properly the ability of the helicopter to crawl along at slow speed under the lowest ceilings, and the helicopter must not be kept out of operation by restrictive rules in weather which may ground other types of aircraft, but in which the flying windmill can operate safely. On the other hand, this slow, and low flying helicopter must not present a collision hazard to aircraft in the process of instrument approach or take-off, both of which will be made safely in the very near future thanks to many new radio developments.

"We must also consider the probability that helicopters may not be greatly interested in airports as we know them now, unless they are larger models on scheduled feeder line, or other commercial runs. The helicopter for the private family may have its greatest appeal in its alibity to fly from the suburban or rural home ground to wherever it is going and to land at the exact destination, not at an airport.

Landings on Roofs.—"This might mean that, eventually, large stores, office buildings and other in-town structures will plan for this traffic with roof-tops designed to handle helicopter landings. Traffic rules regarding a safe altitude over cities, towns, and other 'assemblies of people' as it says in the regulations, face revision when public use of the helicopter, and its safe operations are proven.

"A healthy economy in our country will need the highest possible employment in every possible branch of our living, and I look for the helicopter in industry to play a part in that economy which might surprise many people. I would not attempt to visualize the type of aircraft which will swarm in our skies some years from now when the practicability of owning sky transportation takes the majority of our families into the air, but I do sincerely feel that it will be some form of craft which employs the vertical or near vertical flight abilities of the helicopter.

"The helicopter, in its infancy, is spurting close to the airplane as the answer to the private pilot's desires. It does not tax my imagination to picture a sky plentifully sprinkled with whirling rotors, within a very short time. America is waiting, hopefully; the rest is up to the men at the drawing boards."

Secretary Wallace Begins Flying Lessons

Greeted as he alights from airplane after first instruction flight at the Washington National Airport by Assistant Secretary Burden.

Secretary Wallace has acted on his promise made to Senators during the recent hearing before the Commerce Committee on aviation bills that he would learn to fly.

He started his lessons Monday, March 19, seventeen days after he became Secretary of the Department of Commerce and six days after telling Senators at a hearing on airport legislation that he thought he ought to learn.

With Paul E. Young, Assistant Chief, General Inspection Division, as his instructor, he spent 45 minutes in the air on his first lesson. The Secretary was "an average student," Young said, handling the two-control, tricycle-landing gear plane much as any of his previous students had.

"He took the plane off, and went through the standard familiarization flying of the first lesson, and lined the plane up for the approach and landing," Young reported. "Our experience is that five hours of dual instruction before solo is adequate on this plane, but I am conservative and usually stay with my students a little longer."

Weather permitting, the Secretary planned to take a lesson a day after office hours until he had soloed.

Chicago Civil Aviation Convention Now Before Senate For Approval

ENGINEERING LIBRARY
DUKE UNIVERSITY
DURHAM, N. C.

The Chicago International Civil Aviation Convention has been submitted by the President to the Senate for ratification, and has been the subject of hearings by the Foreign Relations Committee. The President earlier had proclaimed in effect as executive agreements the Chicago documents on exchange of landing rights and establishment of an interim council.

Meanwhile the Senate Commerce aviation subcommittee has been holding hearings on the McCarran All-American Flag Line bill, S. 326. This bill calls for U. S. foreign airline operations to be conducted by one company, in which stock shall be held by all of the present U. S. carriers in varying proportions, major blocks being Pan American Airways 25 percent, American Airlines 12½ percent, and United Airlines 11 percent.

The hearings on the Chicago pact opened with ratification being urged by the State, War and Commerce Departments. Assistant Secretary of State Will Clayton said that without this treaty international flying conditions would be "unendurable." Robert A. Lovett, Assistant Secretary of War for Air, told the Committee that the agreements were in the "best interest of the country and do not impair military security." William A. M. Burden, Assistant Secretary, testified on behalf of the treaty for the Commerce Department, while L. Welch Pogue, Civil Aeronautics Board Chairman, spoke of the treaty as an aid to safety in international flying.

Scorecard of nations signing the Chicago agreements is at present writing as follows:

Interim agreement, 43; permanent convention, 40; air services transit (two freedoms of transit and non-traffic landings), 35; and air transport (five freedoms, including rights to pick up and discharge passengers), 23.

The Civil Aeronautics Board had under consideration at press time an examiners' report in the North Atlantic route case recommending Pan American Airways and American Export Airlines be awarded two routes each. When the Board reaches a decision it will have to submit its proposal to the President for approval.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1945—637266